

**IN THE CLAIMS:**

Please amend claims 1, 6, 9, 14, 15, 18, and 19 as follows.

1. (Currently Amended) An error adjustment system for equalizing transmission characteristics of N signal processing circuitries according to N signal branches ( $N > 1$ ), the system comprising:

a generating unit configured to generate an original complex time domain IQ signal for N signal branches;

N error correction units according to the N signal branches, each configured to perform error correction on the original complex time domain IQ signal of a respective signal branch by means of a correction function;

N signal processing circuitries according to the N signal branches, each configured to process the corrected complex time domain IQ signal of the respective signal branch, thereby obtaining a processed real signal of the respective signal branch; and

a processing device comprising

a receiving unit configured to receive an original complex time domain IQ signal of a signal branch of the N signal branches generated by the generating unit and a processed real signal of the signal branch;

a first calculating unit configured to calculate a processed complex time domain IQ signal of the signal branch from the processed real signal and the original

complex time domain IQ signal of the signal branch using digital sample signs of the original complex time domain IQ signal of the signal branch;

a second calculating unit configured to calculate a difference between the processed complex time domain IQ signal and the original complex time domain IQ signal;

a third calculating unit configured to calculate control values of a correction function of the signal branch on the basis of the difference calculated by the second calculating unit; and

a supplying unit configured to supply the control values calculated by the third calculating unit to the correction function of the signal branch,

wherein the receiving unit, the first to third calculating units and the supplying unit are configured to repeat their operations for all N signal branches.

2. (Previously Presented) The system according to claim 1, further comprising:

N detecting units according to the N signal branches, configured to detect an envelope of the processed real signal,

wherein the receiving unit of the processing device is configured to receive the original complex time domain IQ signal of the signal branch generated by the generating unit and the envelope of the processed real signal of the signal branch, and

wherein the first calculating unit is configured to calculate a processed complex time domain IQ signal of the signal branch from the envelope of the processed real signal and the original complex time domain IQ signal of the signal branch.

3. (Previously Presented) The system according to claim 2, wherein the first calculating unit is configured to calculate an envelope of the original complex time domain IQ signal of the signal branch and to compare the envelope of the processed real signal with the envelope of the original time domain IQ signal at two consecutive time instances, thereby obtaining a processed complex time domain IQ signal.

4. (Previously Presented) The system according to claim 3, wherein the processing device further comprises a synchronizing unit configured to synchronize the envelope of the processed real signal and the original complex time domain IQ signal of the signal branch, and the first calculating unit is configured to compare the envelope of the processed real signal synchronized with the original complex time domain IQ signal with the envelope of the original time domain IQ signal at two consecutive time instances, thereby obtaining a processed complex time domain IQ signal.

5. (Previously Presented) The system according to claim 1, wherein the third calculating unit is configured to approximate a gradient of the difference calculated by the second calculating unit on the basis of the difference and an approximation of a transmission

characteristic of the signal processing circuitry of the signal branch, and to update control values of the correction function based on the approximated gradient, and wherein the supplying unit is configured to supply the updated control values to the correction function of the signal branch.

6. (Currently Amended) A processing device for an error adjustment system for equalizing transmission characteristics of  $N$  signal processing circuitries according to  $N$  signal branches ( $N > 1$ ), the device comprising:

a receiving unit configured to receive an original complex time domain IQ signal of a signal branch of  $N$  signal branches and to receive a processed real signal of the signal branch;

a first calculating unit configured to calculate a processed complex time domain IQ signal of the signal branch from the processed real signal and the original complex time domain IQ signal of the signal branch using digital sample signs of the original complex time domain IQ signal of the signal branch;

a second calculating unit configured to calculate a difference between the processed complex time domain IQ signal and the original complex time domain IQ signal;

a third calculating unit configured to calculate control values of a correction function of the signal branch on the basis of the difference calculated by the second calculating unit; and

a supplying unit configured to supply the control values calculated by the third calculating unit to the correction function of the signal branch,

wherein the receiving unit, the first to third calculating unit and the supplying unit are configured to repeat their operations for all N signal branches.

7. (Previously Presented) The processing device according to claim 6, wherein the receiving unit and the supplying unit are formed by a data bus, and wherein the first to third calculating units are formed by a digital signal processor.

8. (Previously Presented) The processing device according to claim 7, further comprising a storage unit configured to store algorithms to be carried out by the digital signal processor.

9. (Currently Amended) An error adjustment method of equalizing transmission characteristics of N signal processing circuitries according to N signal branches, the method comprising:

generating an original complex time domain IQ signal for N signal branches; and

in each of the N signal branches,

performing error correction on the original complex time domain IQ signal by means of a correction function;

processing the corrected complex time domain IQ signal in a signal processing circuitry, thereby obtaining a processed real signal; and

in a processing device,

receiving an original complex time domain IQ signal of a signal branch of the N signal branches generated and a processed real signal of the signal branch;

first calculating a processed complex time domain IQ signal of the signal branch from the processed real signal and the original complex time domain IQ signal of the signal branch using digital sample signs of the original complex time domain IQ signal of the signal branch;

second calculating a difference between the processed complex time domain IQ signal and the original complex time domain IQ signal;

third calculating control values of a correction function of the signal branch on the basis of the difference calculated in the second calculating;

supplying the control values calculated in the third calculating to the correction function of the signal branch; and

repeating the steps performed in the processing device for all N signal branches.

10. (Previously Presented) The method according to claim 9, further comprising:

in each of the N signal branches,

detecting an envelope of the processed real signal,

wherein the receiving comprises receiving the original complex time domain IQ signal of the signal branch generated and the envelope of the processed real signal of the signal branch, and

wherein the first calculating comprises calculating a processed complex time domain IQ signal of the signal branch from the envelope of the processed real signal and the original complex time domain IQ signal of the signal branch.

11. (Previously Presented) The method according to claim 10, wherein the first calculating comprises:

calculating an envelope of the original complex time domain IQ signal of the signal branch; and

comparing the envelope of the processed real signal with the envelope of the original time domain IQ signal at two consecutive time instances, thereby obtaining a processed complex time domain IQ signal.

12. (Previously Presented) The method according to claim 11, further comprising:

in the processing device,

synchronizing the envelope of the processed real signal and the original complex time domain IQ signal of the signal branch,

wherein the envelope of the processed real signal synchronized with the original complex time domain IQ signal is compared with the envelope of the original time

domain IQ signal at two consecutive time instances, thereby obtaining a processed complex time domain IQ signal.

13. (Previously Presented) The method according to claim 9, wherein the third calculating comprises:

approximating a gradient of the difference calculated in the second calculating on the basis of the difference and an approximation of a transmission characteristic of the signal processing circuitry of the signal branch; and

updating control values of the correction function based on the approximated gradient; and

the supplying comprises supplying the updated control values to the correction function of the signal branch.

14. (Currently Amended) A method of equalizing transmission characteristics of N signal processing circuitries according to N signal branches, the method comprising:

first calculating a processed complex time domain IQ signal of a signal branch of N signal branches from a processed real signal and an original complex time domain IQ signal of the signal branch using digital sample signs of the original complex time domain IQ signal of the signal branch;

second calculating a difference between the processed complex time domain IQ signal and the original complex time domain IQ signal;



third calculating control values of a correction function of the signal branch on the basis of the difference calculated in the second calculating; and

repeating the first to third calculating for all N signal branches.

15. (Currently Amended) A computer program product, embodied on a computer-readable medium, the computer program product comprising software code portions for controlling a computer to perform the following:

first calculating a processed complex time domain IQ signal of a signal branch of N signal branches from a processed real signal and an original complex time domain IQ signal of the signal branch using digital sample signs of the original complex time domain IQ signal of the signal branch;

second calculating a difference between the processed complex time domain IQ signal and the original complex time domain IQ signal;

third calculating control values of a correction function of the signal branch on the basis of the difference calculated in the second calculating; and

repeating the first to third calculating for all N signal branches.

16. (Canceled).

17. (Original) The computer program product according to claim 15, wherein the computer program product is directly loadable into an internal memory of the computer.

18. (Currently Amended) An error adjustment system for equalizing transmission characteristics of N signal processing circuitries according to N signal branches ( $N > 1$ ), the system comprising:

generating means for generating an original complex time domain IQ signal for N signal branches;

N error correction means according to the N signal branches, each for performing error correction on the original complex time domain IQ signal of a respective signal branch by means of a correction function;

N signal processing means according to the N signal branches, each for processing the corrected complex time domain IQ signal of the respective signal branch, thereby obtaining a processed real signal of the respective signal branch; and

a processing device comprising

receiving means for receiving an original complex IQ time domain signal of a signal branch of the N signal branches generated by the generating means and a processed real signal of the signal branch;

first calculating means for calculating a processed complex time domain IQ signal of the signal branch from the processed real signal and the original complex time domain IQ signal of the signal branch using digital sample signs of the original complex time domain IQ signal of the signal branch;

second calculating means for calculating a difference between the processed complex time domain IQ signal and the original complex time domain IQ signal;

third calculating means for calculating control values of a correction function of the signal branch on the basis of the difference calculated by the second calculating means; and

supplying means for supplying the control values calculated by the third calculating means to the correction function of the signal branch,

wherein the receiving means, the first to third calculating means and the supplying means are configured to repeat their operations for all N signal branches.

19. (Currently Amended) A processing device for an error adjustment system for equalizing transmission characteristics of N signal processing circuitries according to N signal branches ( $N > 1$ ), the device comprising:

receiving means for receiving an original complex time domain IQ signal of a signal branch of N signal branches and receiving a processed real signal of the signal branch;

first calculating means for calculating a processed complex time domain IQ signal of the signal branch from the processed real signal and the original complex time domain IQ signal of the signal branch using digital sample signs of the original complex time domain IQ signal of the signal branch;

second calculating means for calculating a difference between the processed complex time domain IQ signal and the original complex time domain IQ signal;

third calculating means for calculating control values of a correction function of the signal branch on the basis of the difference calculated by the second calculating means; and

supplying means for supplying the control values calculated by the third calculating means to the correction function of the signal branch,

wherein the receiving means, the first to third calculating means and the supplying means are configured to repeat their operations for all N signal branches.